| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/751,836 | 12/29/2000 | Philipp Heinz Schmid | M61.12-0323 | 9264 |

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|---|---|---|

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| EXAMINER |
|---|
| SKED, MATTHEW J |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2655 | |

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

| | Application No. | Applicant(s) |
| | 09/751,836 | SCHMID ET AL. |
| **Office Action Summary** | Examiner | Art Unit | |
| | Matthew J. Sked | 2655 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>05 December 2005</u>.

2a)☒ This action is **FINAL**.    2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-39,47 and 50-54</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>47 and 50</u> is/are allowed.

6)☒ Claim(s) <u>1-4,6-39 and 51-54</u> is/are rejected.

7)☒ Claim(s) <u>5</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All    b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____ .

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

1.     The objection to claims 47 and 50 are withdrawn in view of the amendment filed 12/05/05.

2.     The rejection of claims 1-39, 47 and 50 are withdrawn in view of the amendment filed 12/05/05.

3.     Applicant's arguments filed 12/05/05 have been fully considered but they are not persuasive. Applicant states that Sun does not teach, "wherein the application-independent interface and the engine-independent interface are different interfaces". The Examiner respectfully disagrees. Sun teaches a speech API to control the interfacing between an application and a speech-related engine. As outlined in section 4.1 of Sun, the system identifies the application's functional requirements for an engine, locates and creates a specified engine, allocates resources to this engine, sets up the engine, performs operations with the engine and finally deallocates the resources of the engine. As shown, the speech API communicates with both the application and the engine. Therefore, because the application and the engine have different communication functionalities, the speech API must comprise both an application interface component and an engine interface component in order to control these interactions. Being that these interface components would be specific to either the application or the engine they would inherently be different. Therefore, the new rejection is given below, necessitated by amendment.

4.      In response to the traversal of the Official Notice given in claims 4, 8 and 53, the

Examiner respectfully submits the requested references.

As per claims 4 and 53, Tewfik et al. (U.S. Pat. Pub. 2004/0174996A1) teaches

an audio output device that can output audio in various formats based upon the format

of the audio file hence the data format of the audio output device is changed when a

differently formatted file is obtained (paragraph 23).

As per claim 8, Sugiyama et al. (U.S. Pat. 6,345,245) teaches a system for

managing a common dictionary as well as user dictionaries where the user dictionaries

are updated by loading entries from the common dictionary (col. 2, lines 34-54).


## Claim Rejections - 35 USC § 102

5.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public
> use or on sale in this country, more than one year prior to the date of application for patent in the United
> States.

6.      Claims 1-3, 6, 7, 10-39, 51 and 52 are rejected under 35 U.S.C. 102(b) as being

anticipated by Sun Microsystems ("Java Speech API Programmer's Guide"), herein

referred to as Sun.

As per claim 1, Sun teaches a middleware layer configured to facilitate

communication between a speech-related application and a speech-related engine,

comprising:

a speech component having an application-independent interface (Java Speech API

can be used in a wide range of applications such as a voice response system, a

dictation system and speech technology for the handicapped, hence application-

independent, section 1.1) configured to be coupled to the application and an engine-

independent interface (includes a standard API for speech so users can choose the

speech products to use that best meet their needs, wherein these speech products are

speech engines such as speech synthesizers and speech recognizers, hence engine-

independent, sections 1.1 and 4.1) configured to be coupled to the engine and at least

one processing component configured to perform speech related services for the

application and the engine (provides support and interface between the applications and

the speech engines, section 1.2), wherein the application-independent interface and the

engine-independent interface are different interfaces (speech API communicates with

both the application and the engine, therefore it must inherently have both an

application interface component and an engine interface component, section 4.1).

7.      As per claim 2, Sun teaches the speech component includes a plurality of

processing components associated with a plurality of different processes, wherein the

speech component further comprises:  a marshaling component, configured to access

at least one processing component in each process and to marshal information transfer

among the processes (Speech API has multiple processes that would inherently have a

component to transfer the data between the processes, section 4.1).

8.      As per claims 3 and 6, Sun teaches a format negotiation component configured

to negotiate a data format of data used by the audio device and data used by the engine

wherein the format negotiation component is configured to invoke a format converter to convert the data format of data between the engine and the audio device to a desired format based on the data format used by the audio device and the data format used by the engine (must inherently convert the queued digital signal created by the synthesizer into an analog signal to be output through the speaker, section 5.4).

9.      As per claim 7, Sun teaches a lexicon container object configured to contain a plurality of lexicons and to provide a lexicon interface to the engine to represent the plurality of lexicons as a single lexicon to the engine and load the one or more user lexicons as one or more application lexicons (vocabulary manager adds the list of words used by the recognizer, section 4.6.3).

10.     As per claims 10, 36 and 37, Sun teaches a site object having an interface configured to receive result information, indicative of recognized speech from the engine (results from synthesizer are placed in a queue and result interface obtains recognition results, sections 5.4 and 6.7.3.1).

11.     As per claim 11, Sun teaches the engine comprises a TTS engine (speech synthesis, section 5) and wherein the processing component comprises a first object having an application interface and an engine interface (text to be synthesized is inputted through the application hence these interfaces exist, section 5.3).

12.     As per claim 12, Sun teaches the application interface exposes a method configured to receive engine attributes from the application and instantiate a specific engine based on the engine attributes received (application creates and allocates information to the synthesizer, section 5.1).

13.     As per claim 13, Sun teaches wherein the application interface exposes a

method configured to receive audio device attributes from the application and instantiate

a specific audio device based on the audio device attributes received (receives

indication from the application regarding the volume, speech rate and prosody of the

speech to be outputted by the audio device, section 5.6).

14.     As per claim 14, Sun teaches a parser to receive input data to be synthesized

and parse the input data into text fragments (formats the inputted text for synthesis,

sections 2.1 and 5.3).

15.     As per claim 15, Sun teaches the engine interface is configured to call a method

exposed by the engine to begin synthesis (property change events inherent in an

engine call a method to change properties, section 5.6).

16.     As per claim 16, Sun teaches the engine comprises a speech recognition engine

(section 6) and wherein the processing component comprises a first object having an

application interface and an engine interface (application provides grammars to the

engine so this interface must exist, section 6.1).

17.     As per claim 17, Sun teaches wherein the application interface exposes a

method configured to receive recognition attributes from the application and instantiates

a specific speech recognition engine based on the engine attributes received

(application creates a grammar and defines the grammar, section 6.1).

18.     As per claim 18, Sun teaches wherein the application interface exposes a

method configured to receive audio device attributes from the application and instantiate

a specific audio device based on the audio device attributes received (receives

indication from the application regarding the volume, speech rate and prosody of the speech to be outputted by the audio device, section 5.6).

19.     As per claim 19, Sun teaches wherein the application interface exposes a method configured to receive an alternate request from the application and to configure the speech component to retain alternates provided by the SR engine for transmission to the application based on the alternate request (recognizer creates alternate recognition results and application specifies the number of alternates to return, sections 6.7.9.2 and 6.7.10).

20.     As per claim 20, Sun teaches the application interface exposes a method configured to receive an audio information request from the application and to configure the speech component to retain audio information recognized by the SR engine based on the audio information request (recognizer performs language model adaptation based upon the input from the application, section 6.6).

21.     As per claim 21, Sun teaches wherein the application interface exposes a method configured to receive bookmark information from the application identifying a position in an input data stream being recognized and to notify the application when the SR engine reaches the identified position (attaches a ResultListener to receive event progress information during recognition and uses a marker-reaches event in audio output hence suggesting its use in recognition, sections 5.5 and 6.1).

22.     As per claim 22, Sun teaches the engine interface is configured to call the SR engine to set acoustic profile information in the SR engine (recognizer receives a profile that sets the acoustic models that are used, section 6.9).

23.    As per claim 23, Sun teaches the engine interface is configured to call the SR

engine to load a grammar in the SR engine (grammar interface creates and enables

grammars, section 6.4.1).

24.    As per claim 24, Sun teaches the engine interface is configured to call the SR

engine to load a language model in the SR engine (profile loaded into the recognizer

contains the language model, section 6.9).

25.    As per claims 25 and 27, Sun teaches wherein the application interface exposes

a method configured to receive a grammar request from the application and to

instantiate a grammar object based on the grammar request to be used by the SR

engine (application loads and enables the grammars in the engine, section 6.1).

26.    As per claim 26, Sun teaches the grammar object includes a word sequence data

buffer (grammar format includes a rule defining the sequence of allowable words,

section 2.2.1).

27.    As per claim 28, Sun teaches the grammar includes words, rules and transitions

and wherein the grammar object includes an application interface and an engine

interface (grammar includes rules, words and transitions that is controlled by the

grammar interface, section 6.4.1 and 6.5.3).

28.    As per claim 29, Sun teaches wherein the application interface exposes a

grammar configuration method configured to receive grammar configuration information

from the application and configure the grammar based on the grammar configuration

information (Speech API supports dynamic grammars that can be changed at any time,

section 6.4.2).

29.     As per claim 30, Sun teaches grammar configuration method is configured to

receive word change data, rule change (activation/deactivation) data, and transition

change data and change words, rules and transitions in the grammar in the grammar

object based on the grammar received (setEnable method enables and disables rules,

section 6.5.1).

30.     As per claim 31, Sun teaches wherein the grammar configuration method is

configured to receive grammar activation information and enable or disable grammars in

the grammar object based on the grammar activation information (grammar interface

enables and disables grammars, section 6.4.1).

31.     As per claim 32, Sun teaches to change words, rules and transitions in the

grammar in the grammar object based on the grammar received (commands to change

rules in the grammar and allows for dynamic grammars, sections 6.5.1 and 6.5.4).

32.     As per claims 33-35, Sun teaches the engine interface is configured to call the

SR engine to load the grammar in the SR engine, wherein the call updates a

configuration of the grammar or activation state in the SR engine (grammar interface

enables, updates and activates grammars, sections 6.4.1 and 6.4.2).

33.     As per claim 38, Sun teaches wherein the engine interface on the site object is

configured to receive update information from the SR engine indicative of a current

position of the SR engine in an audio input stream to be recognized (attaches a

ResultListener to indicate the progress of recognition, section 6.1).

34.     As per claim 39, Sun teaches a result object configured to obtain the result

information from the site object and expose an interface configured to pass the result

information to the application (result interfaces receive results and provide them to the application, section 6.7.3).

35.    As per claim 51, Sun teaches a method of updating a grammar configuration of a grammar used by a speech recognition engine based on update information from an application, comprising:

calling a first object in an application-independent, engine-independent, middleware layer, between the SR engine and the application (Java Speech API can be used in a wide range of applications, hence application-independent and includes a standard API for speech so users can choose the speech products to use that best meet their needs hence engine-independent, section 1.1), with a pause request (suspended state, section 6.3.3);

delaying return from the first object on a subsequent call from the SR engine (delays the return to the listening state until grammar updating is complete, section 6.3.3);

receiving the update information from the application at the middleware layer (grammars are updated in response to the user input which would come from the application, section 6.3.3);

passing the update information from the middleware layer to the SR engine (grammars in the recognizer are updated, section 6.3.3); and

returning on the subsequent call from the SR engine (returns to the listening state, section 6.3.3).

36.    As per claim 52, Sun teaches to change words, rules and transitions in the

grammar in the grammar object based on the grammar received (commands to change

rules in the grammar and allows for dynamic grammars, sections 6.5.1 and 6.5.4).


## Claim Rejections - 35 USC § 103

37.    The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

38.    Claims 4, 53 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Sun in view of Tewfik et al. (U.S. Pat. Pub. 2004/0174996A1).

As per claim 4, Sun does not specifically teach the format negotiation component

is configured to reconfigure the audio device to change the data format of the data used

by the audio device.

Tewfik teaches an audio output device that can output audio in various formats

based upon the format of the audio file hence the data format of the audio output device

is changed when a differently formatted file is obtained (paragraph 23).

It would have been obvious to one or ordinary skill in the art at the time of

invention to modify the system of Sun to reconfigure the audio device to change the

data format of the data used by the audio device as taught by Tewfik because it would

enable the audio device to stay consistent with the speech engine.

39.    As per claim 53, Sun teaches a method of formatting data for use by a speech

engine and an audio device, comprising:

obtaining, at a middleware layer which facilitates communication between the

speech engine and an application, a data format for data used by the engine;  obtaining,

at the middleware layer, a data format of data used by the audio device; determining, at

the middleware layer, whether the engine data format and the audio data format are

consistent; and if not utilizing the middleware layer to attempt to change the data format

of the data (middleware would inherently know the data formats used by the audio

device and engine to output the speech and would inherently convert the queued digital

signal created by the synthesizer into an analog signal to be output through the

speaker, section 5.4).

Sun does not specifically teach the format negotiation component is configured to

reconfigure the audio device to change the data format of the data used by the audio

device.

Tewfik teaches an audio output device that can output audio in various formats

based upon the format of the audio file hence the data format of the audio output device

is changed when a differently formatted file is obtained (paragraph 23).

It would have been obvious to one or ordinary skill in the art at the time of

invention to modify the system of Sun to reconfigure the audio device to change the

data format of the data used by the audio device as taught by Tewfik because it would

enable the audio device to stay consistent with the speech engine.

40.    As per claim 54, Sun teaches invoking a format converter to convert the data

format of data between the engine and the audio device to a desired format based on

the data format used by the audio device and the data format used by the engine (must

inherently convert the queued digital signal created by the synthesizer into an analog

signal to be output through the speaker, section 5.4).


41.    Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Sun in view of Sugiyama et al. (U.S. Pat. 6,345,245).

As per claim 8, Sun does not specifically teach loading one or more user lexicons

and one or more application lexicons from a lexicon data store.

Sugiyama teaches a system for managing a common dictionary as well as user

dictionaries where the user dictionaries are updated by loading entries from the

common dictionary (col. 2, lines 34-54).

It would have been obvious to one of ordinary skill in the art at the time of

invention to modify the system of Sun to load both user lexicons and application

lexicons into the engine as taught by Sugiyama because using concentrated

vocabularies give better recognition results.

42.    As per claim 9, Sun teaches the lexicon interface is configured to be invoked by

the engine to add a lexicon provided by the engine (Vocabmanager provided by the

engine, section 4.6.3).

### *Allowable Subject Matter*

43.     Claims 47 and 50 are allowed.

44.     Claim 5 is objected to as being dependent upon a rejected base claim, but would

be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims.


### *Conclusion*

45.     The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Boyle, III et al. (U.S. Pat. 5,717,747) teaches a system with a

middleware layer that comprises both a distinct interface for the application and a

distinct interface for the engine.

46.     Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action. Any inquiry concerning this

communication or earlier communications from the examiner should be directed to

Matthew J. Sked whose telephone number is (571) 272-7627. The examiner can

normally be reached on Mon-Fri (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

MS
02/07/06

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